

URBAN IRRIGATION WATER DEMANDS

In order to determine the amount of alternative water sources that will be necessary for future urban irrigation water, an evaluation of service area water demands was performed. Figures 6 and 7 delineate the existing service areas for the study area. This evaluation has revealed that significant increases in urban irrigation demands are projected through 2020. It was concluded that in some areas such as Collier County's North and South service areas and Cape Coral in Lee County, historically used groundwater sources and reclaimed water might not be sufficient to support these demands. In addition, the seasonality of demands and potential supplies is limiting the use of some sources. There is 100 percent utilization of reclaimed water supplies in some portions of this project area during the dry months, while there is a surplus during the wet season. It was determined that additional sources of water do exist in the study area to offset a portion of the projected irrigation demands, mainly from surface water and reclaimed water expansions. It is clear that storage will be an integral component of this project that will be necessary to span the gap between the seasonal variability of wet weather surpluses and dry season deficits. Figures 8 and 9 present the future wastewater service areas.

Permanent population projections for each service area were developed from a variety of sources including franchise or utility-supplied data. Most of the population projections extended through 2020, but for those that did not, a linear regression was performed using the available data. Table 5 presents the current and future population projections and the source of information for each service area.

It was assumed that the supply was equivalent to the projected influent wastewater flow. The supplies were calculated by taking the current wastewater flows and dividing by the service area population. This resulted in a per capita wastewater generation factor. These monthly factors were then multiplied by the projected 2020 population. As a result, the temporal variability was accounted for in the future projections. Tables 6 and 7 display the current and future (2020) reclaimed water supply.

The population for Collier County is predicted to increase by approximately 69% over the next 20 years, while the Lee County population is expected to experience 81% growth. This results in an overall study area growth of 76%.

The urban irrigation water demands were developed using both actual demand data and the modified Blaney-Criddle (B-C) model as provided by the District. The B-C methodology is explained in Attachment B. The demands were generated for the 1-in-10 year drought event, meaning that there is a probability of such a drought occurring once in every ten years. The B-C modeling analysis is included in Attachment C. The following input variables were used to determine the B-C urban irrigation water demands:

- Rainfall Station: Naples or Ft. Myers
- Irrigation System: Sprinkler
- Crop: Turf Grass
- Irrigable Acreage: Calculated for each service area
- Soil Type: Collier, 0.4 and Lee, 0.8 (based on Figures C-8 and C-4 from the Management of Water Use Permitting Information Manual, Vol. III)

LEGEND:

- ▲ Wastewater Treatment/Reclamation Facilities
- ∕ Coast Line
- ∕ Major Roads
- ∕ County Boundary
- Water
- Pine Island
- Cape Coral Utilities
- North Fort Myers Utilities
- City of Fort Myers-Central
- City of Fort Myers-South
- Gateway
- Florida Water Services
- Fort Myers Beach
- Fiesta Village
- Waterway Estates
- Forest Utilities
- Bonita Springs Utilities
- Sanibel
- Gulf Environmental Services

10 0 10 Miles

Master Plan for the
Regional Irrigation Distribution System (RIDS)
for the Lower West Coast Region

BOYLE

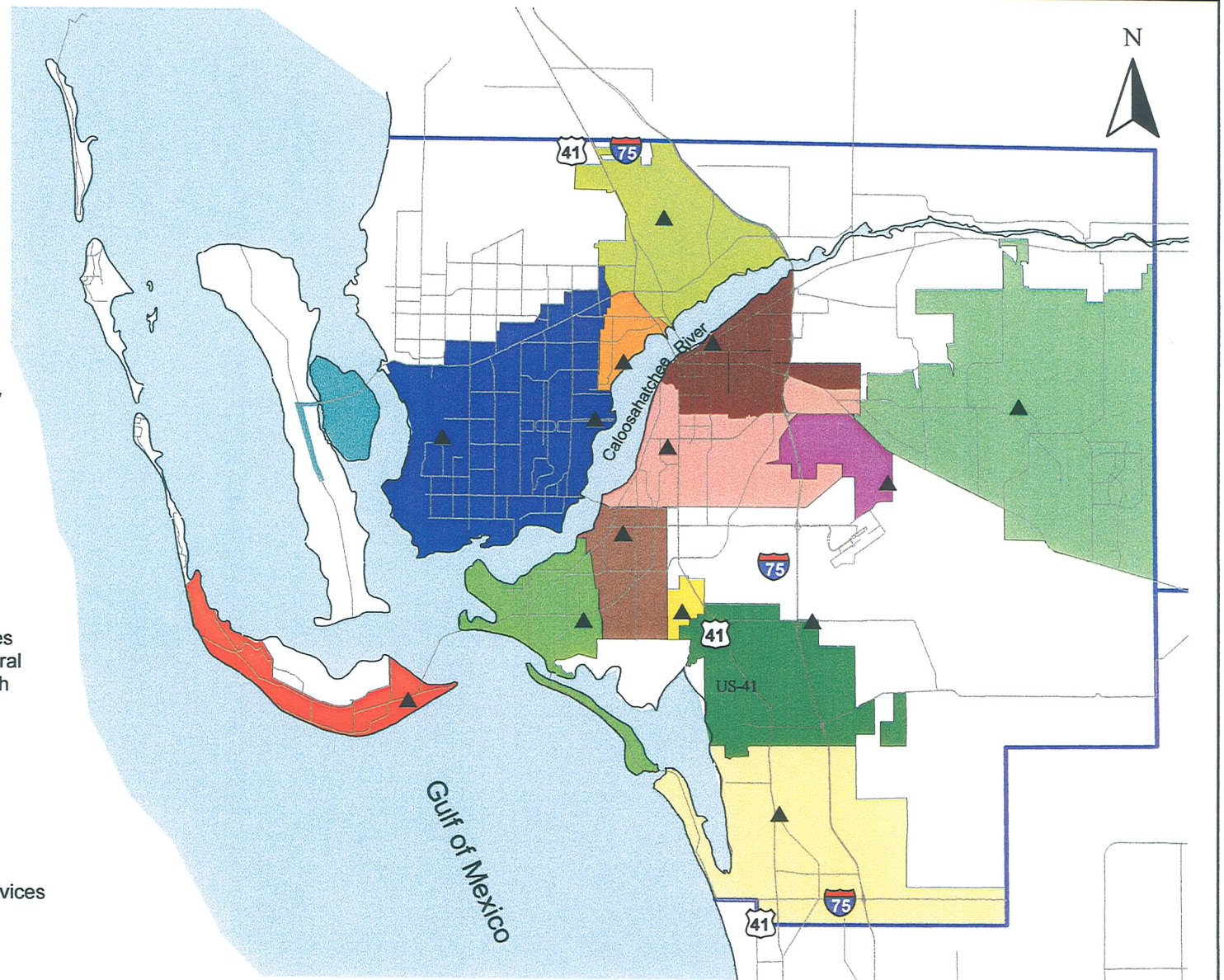


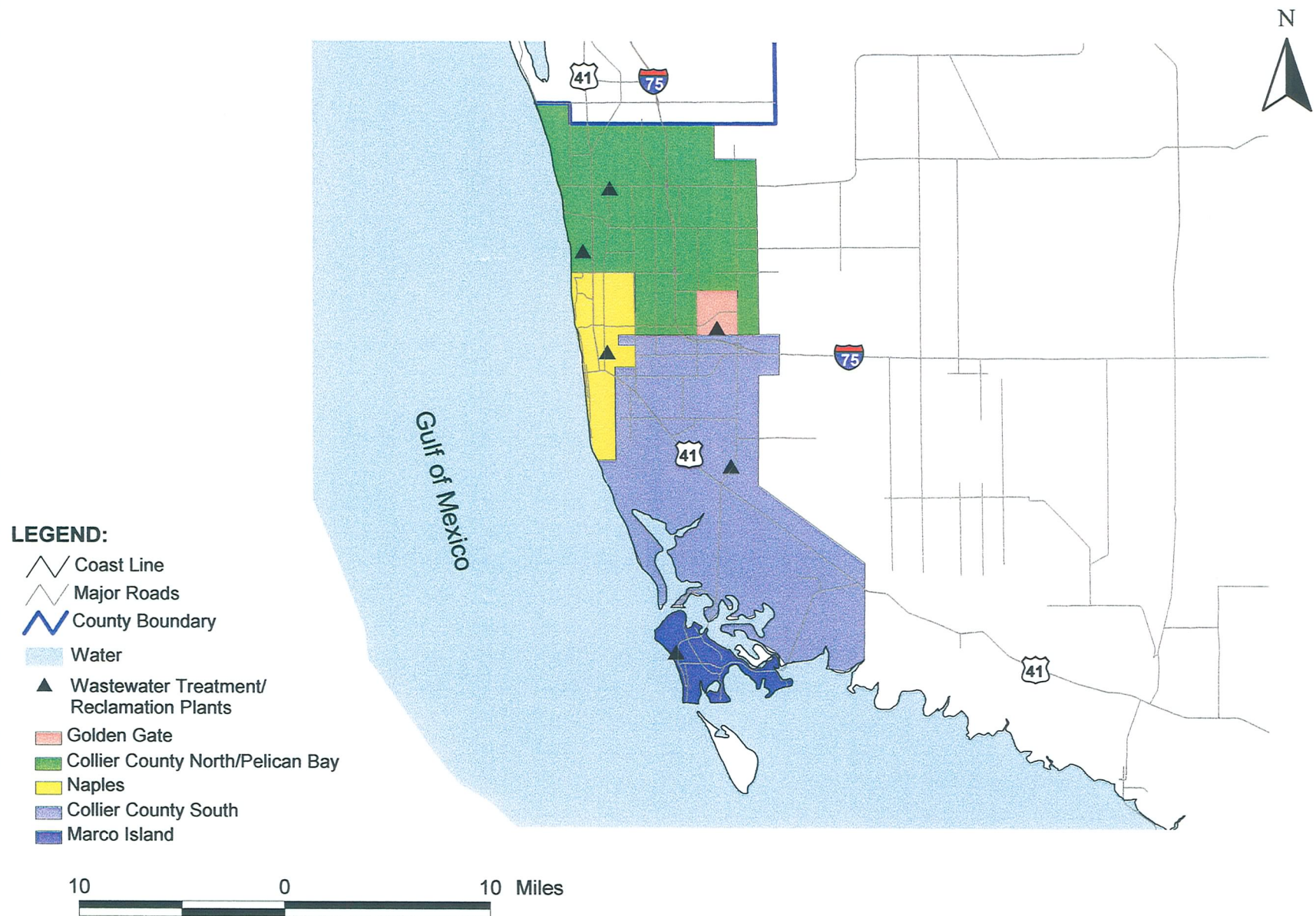
South Florida
Water Management District

**EXISTING WASTEWATER SERVICE AREAS
- LEE COUNTY**

Figure No.

6

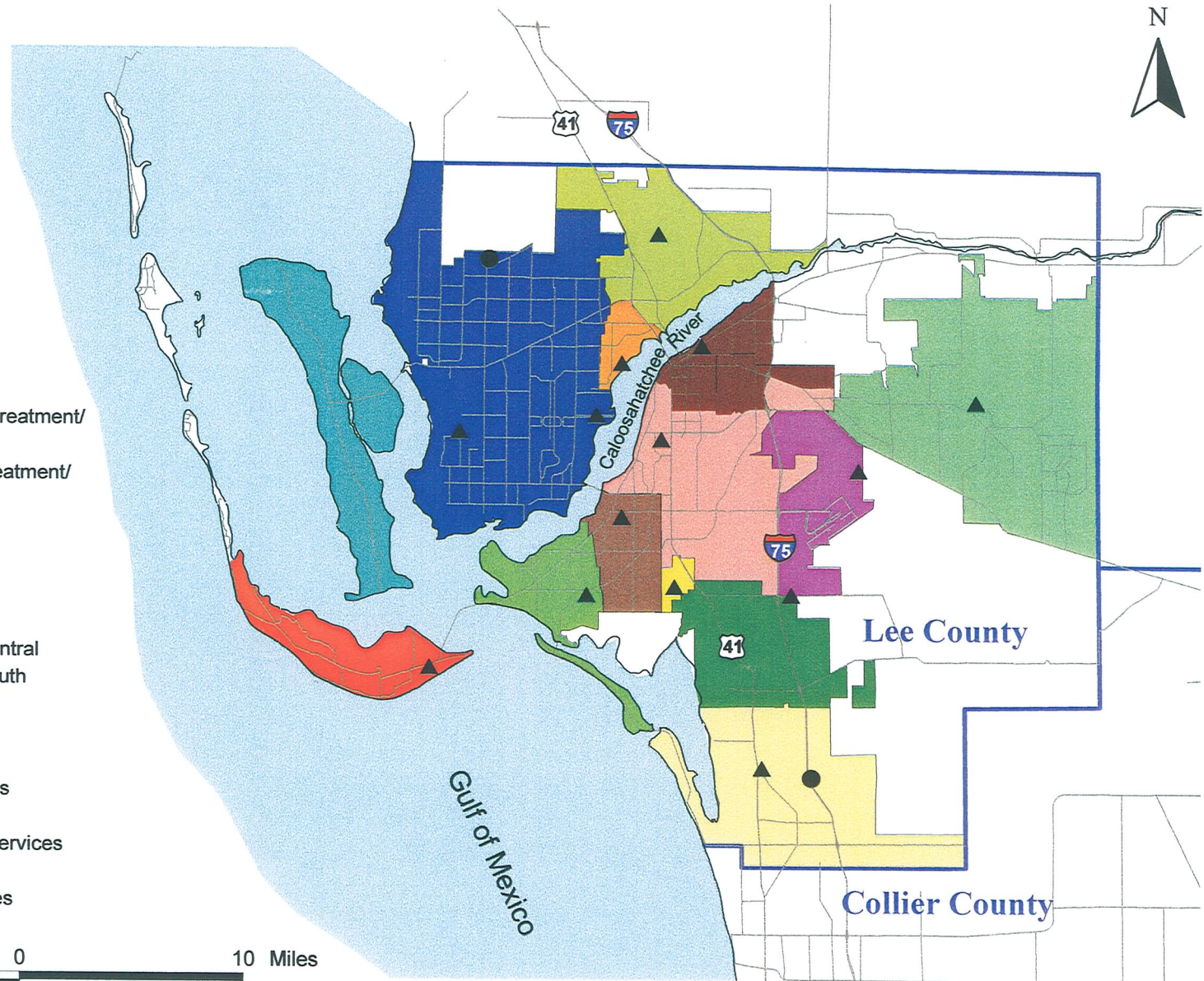




LEGEND:

-  Coast Line
-  Major Roads
-  County Boundary
-  Water
-  Existing Wastewater Treatment/Reclamation Facilities
-  Future Wastewater Treatment/Reclamation Facilities
-  Cape Coral
-  Pine Island
-  Waterway Estates
-  North Fort Myers
-  City of Fort Myers-Central
-  City of Fort Myers-South
-  Fort Myers Beach
-  Fiesta Village
-  Gateway
-  Bonita Springs Utilities
-  Sanibel Island
-  Gulf Environmental Services
-  Forest Utilities
-  Florida Water Services

10 0 10 Miles



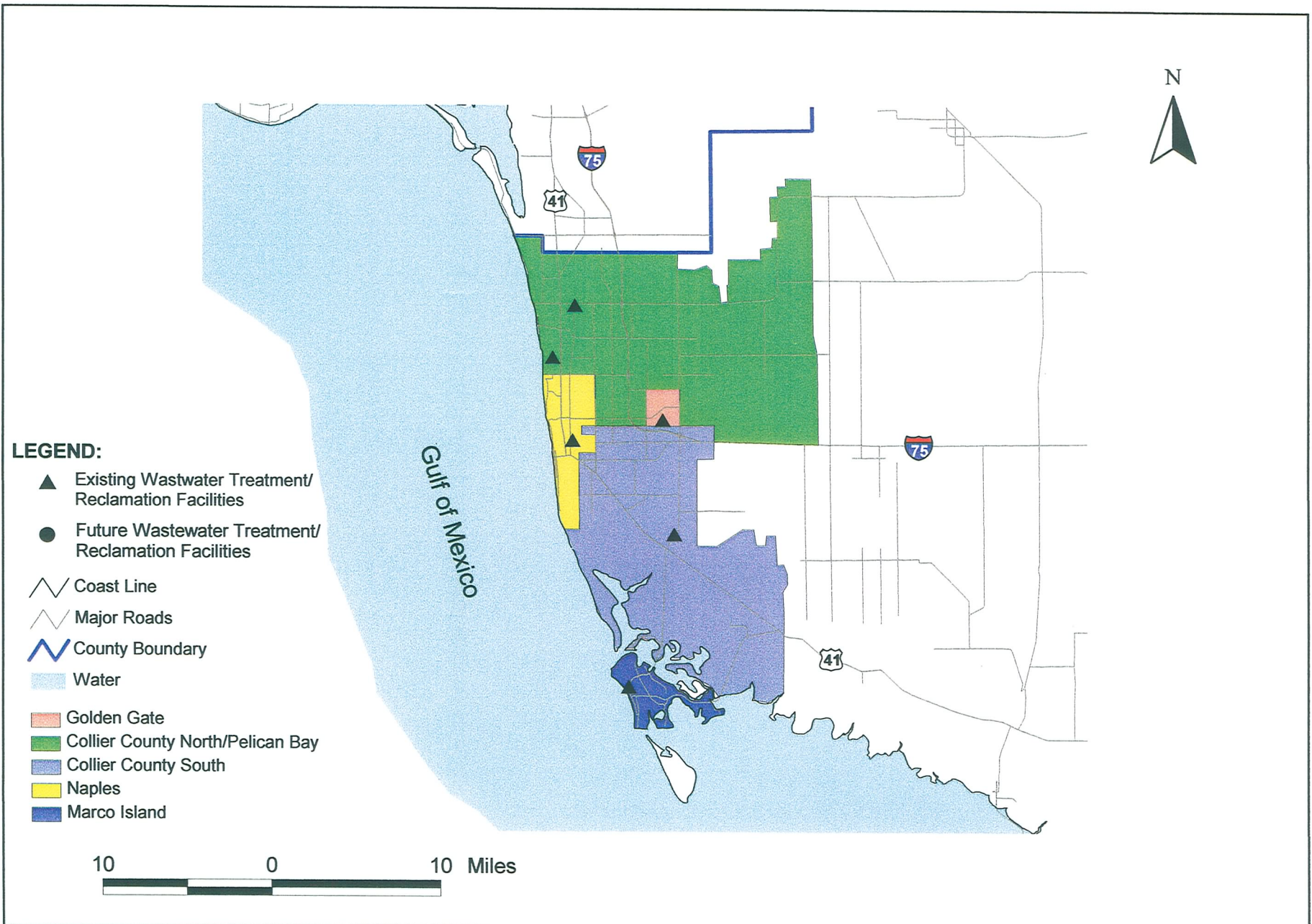


Table 5
Population Projections

Facility/Service Area	Population		Source
	'99/'00	2020	
Collier County			
Collier Co. North/Pelican Bay	61,694	137,912	2001 Collier Co. Master Plan Report
Collier Co. South	64,829	145,705	2001 Collier Co. Master Plan Report
Golden Gate	20,951	20,951	2001 Collier Co. Master Plan Report
Marco Island Utilities	12,670	18,806	2001 Collier Co. Master Plan Report
Naples	31,926	36,931	2002 Reclaimed Water Master Plan
Miscellaneous Collier Co.	21,692	47,557	2001 Collier Co. Master Plan Report
Subtotal	213,762	360,305	
Lee County			
Bonita Springs	33,900	63,808	2001 Bonita Springs Tech Memo 3
Cape Coral Utilities	73,840	176,581	City of Cape Coral Utility Master Plan Update and 2002 WUP
Fiesta Village	22,200	39,291	Current determined from monthly flows assuming 100 GPCD, Future determined using Update to Water Supply Master Plan (2000)
Forest Utility	2,500	2,500	Determined from monthly flows assuming 100 GPCD
Ft. Myers Beach	45,173	62,819	Lee County Planning Community Web Map
Ft. Myers Central	26,530	36,893	Lee County Planning Community Web Map (also taking into account service area acreage for a better estimate)
Ft. Myers South	47,780	55,764	Lee County Planning Community Web Map (also taking into account service area acreage for a better estimate)
Gateway	3,020	10,585	Lee County Planning Community Web Map
Gulf Environmental Services	13,484	33,140	Taken from the Lower West Coast Water Supply Plan ('00 from Planning Community Web Map)
Lehigh Acres	22,382	91,734	Lee County Planning Community Web Map - a hand calculation was performed utilizing EDUs (from '99 Lehigh Acres Wastewater Treatment Plant Permit Modification and Reuse Engineering Report) to determine the sewered population
North Ft. Myers	50,301	55,764	Lee County Planning Community Web Map
Pine Island	8,687	12,280	Lee County Planning Community Web Map
Sanibel	6,482	7,691	2001 Sanibel Reuse Implementation Report
Waterway Estates	7,768	8,603	Lee County Regional Water Supply Authority Update to Water Supply Master Plan 2000-2030
Subtotal	364,047	657,453	
Total	577,809	1,017,758	

Table 6
Reclaimed Water Supply – Current

Facility	Monthly Flows (MGD)												Average (MGD)	Annual Total (MGY)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec		
Collier Co.														
Collier Co. North ^d	9.6	10.0	10.4	9.1	7.7	7.1	6.9	7.8	8.6	8.4	9.1	8.9	8.6	3,150.9
Collier Co. South ^d	6.7	7.0	6.9	6.4	5.5	5.4	5.6	6.3	7.5	6.5	6.6	6.3	6.4	2,329.5
Golden Gate ^b	0.9	0.8	0.8	0.8	0.8	0.8	1.0	0.9	1.5	0.9	0.8	0.9	0.9	331.1
Marco Island Utilities ^b	2.5	3.1	3.4	2.7	3.0	3.1	2.9	3.2	1.9	2.1	2.1	2.0	2.7	974.2
Naples ^b	6.7	6.9	7.3	6.8	5.6	5.8	7.8	7.1	6.8	6.7	6.8	6.7	6.7	2,458.3
Subtotal	26.4	27.9	28.8	25.8	22.5	22.2	24.2	25.2	26.3	24.6	25.3	24.8	25.3	9,243.9
Lee Co.														
Bonita Springs ⁱ	2.9	2.9	3.1	2.8	2.3	2.1	2.5	2.4	3.1	2.8	2.9	3.0	2.7	997.6
Cape Coral Utilities ^{c,d}	9.1	8.7	9.0	8.8	8.5	9.7	10.6	10.6	11.6	9.5	9.0	8.6	9.5	3,456.2
Fiesta Village ^d	2.3	2.4	2.3	2.1	1.8	1.9	2.2	2.3	2.8	2.3	2.1	2.0	2.2	808.9
Forest Utility ^b	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	90.9
Ft. Myers Beach ^d	3.3	3.8	3.8	3.2	2.3	2.5	2.6	2.7	3.1	2.7	3.1	2.9	3.0	1,099.8
Ft. Myers Central ^e	4.4	4.9	5.1	5.2	4.9	5.5	7.6	9.0	12.3	7.1	5.3	4.8	6.3	2,314.1
Ft. Myers South ^e	5.5	5.5	5.8	5.7	4.9	5.4	7.8	9.6	11.5	7.0	5.8	5.5	6.7	2,437.3
Gateway ^d	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	107.2
Gulf Environmental Services ^b	1.4	1.6	1.6	1.4	1.2	1.2	1.3	1.3	1.6	1.1	1.3	1.3	1.3	492.2
Lehigh Acres ^b	0.9	0.8	0.8	0.8	0.6	0.8	1.1	1.7	2.4	2.0	1.2	1.2	1.2	438.4
North Ft. Myers ^b	1.4	1.4	1.3	1.4	2.6	1.2	2.0	1.9	2.0	1.8	1.3	1.3	1.6	593.1
Pine Island ^{f,g}	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	37.5
Sanibel ^h	0.8	0.9	1.0	1.0	0.7	0.9	1.0	0.9	0.9	0.8	0.8	0.8	0.9	319.3
Waterway Estates ^d	0.9	0.7	0.8	0.7	0.7	0.8	0.9	1.1	1.2	1.0	0.8	0.8	0.9	318.6
Subtotal	33.5	34.1	35.4	33.9	31.2	32.4	40.4	44.3	53.1	38.9	34.2	32.9	37.0	13,511.1
Total Monthly Flow (MGD)	59.9	62.0	64.1	59.6	53.7	54.6	64.6	69.4	79.5	63.5	59.5	57.7	62.3	22,755.0

a. This data displays 1999 flows from Oct.- Dec. and 2000 flows for Jan. - Sept.

b. This data was taken from Monthly Operating Reports submitted to the Dept. of Environmental Protection (Jan - Sept '01, Oct - Dec '00)

c. Influent Cape Coral data combines the flow from Cape Coral Everest and Cape Coral Southwest WWTPs

d. 2000 data

e. This data displays 2000 data from Oct. - Dec. and 2001 flows for Jan. - Sept.

f. 2001 data (this plant just opened in Feb. of 2001)

g. 2001 data from Feb.- Sept. w/ supplemental data from Matlacha WWTP (now closed)

h. 1999 data

i. 2001 data

* The Highpoint WWTP was deleted from the study due to its small flows and lack of data

Table 7
Reclaimed Water Supply – Future

Facility	Monthly Flows (MGD)												Average (MGD)	Annual Total (MGY)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec		
Collier Co.														
Collier Co. North	21.4	22.4	23.2	20.3	17.1	15.8	15.5	17.5	19.3	18.8	20.2	20.0	19.3	7,043.5
Collier Co. South	15.1	15.6	15.6	14.3	12.3	12.2	12.6	14.0	16.9	14.5	14.8	14.1	14.3	5,235.5
Golden Gate	0.9	0.8	0.8	0.8	0.8	0.8	1.0	0.9	1.5	0.9	0.8	0.9	0.9	331.1
Marco Island Utilities	4.5	5.6	6.0	4.7	5.3	5.6	5.2	5.7	3.3	3.8	3.8	3.7	4.8	1,740.1
Naples	7.8	8.0	8.4	7.9	6.4	6.7	9.0	8.2	7.9	7.7	7.8	7.8	7.8	2,843.7
Subtotal	49.7	52.5	54.1	48.1	41.9	41.1	43.3	46.2	48.9	45.8	47.4	46.3	47.1	17,193.8
Lee Co.														
Bonita Springs	5.4	5.5	5.8	5.3	4.3	4.0	4.6	4.6	5.8	5.3	5.5	5.6	5.1	1,877.8
Cape Coral Utilities	21.7	20.8	21.6	21.0	20.3	23.2	25.3	25.3	27.7	22.8	21.5	20.5	22.6	8,265.3
Fiesta Village	4.0	4.3	4.1	3.8	3.3	3.3	3.9	4.1	5.0	4.1	3.7	3.6	3.9	1,431.7
Forest Utility	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	90.9
Ft. Myers Beach	4.5	5.3	5.3	4.5	3.2	3.5	3.6	3.7	4.4	3.8	4.3	4.1	4.2	1,529.4
Ft. Myers Central	6.2	6.8	7.1	7.3	6.9	7.6	10.6	12.4	17.1	9.9	7.3	6.6	8.8	3,218.0
Ft. Myers South	6.4	6.4	6.8	6.7	5.7	6.3	9.2	11.2	13.4	8.2	6.7	6.4	7.8	2,844.6
Gateway	1.0	0.9	1.0	0.9	1.0	1.0	1.0	1.2	1.1	1.1	1.1	1.1	1.0	375.7
Gulf Environmental Services	3.4	3.8	3.8	3.5	3.0	2.9	3.2	3.3	3.8	2.8	3.1	3.1	3.3	1,209.6
Lehigh Acres	3.6	3.4	3.2	3.3	2.5	3.2	4.7	7.1	10.0	8.4	4.8	5.0	4.9	1,796.7
North Ft. Myers	1.6	1.5	1.4	1.5	2.9	1.3	2.2	2.1	2.2	2.0	1.5	1.5	1.8	657.5
Pine Island	0.1	0.0	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	53.1
Sanibel	1.0	1.1	1.2	1.2	0.8	1.0	1.2	1.1	1.0	0.9	1.0	0.9	1.0	378.9
Waterway Estates	1.0	0.8	0.9	0.8	0.8	0.8	1.0	1.2	1.4	1.1	0.9	0.9	1.0	352.8
Subtotal	60.2	60.8	62.8	60.1	55.0	58.4	70.9	77.8	93.3	70.7	61.8	59.8	66.0	24,081.8
Total Monthly Flow (MGD)	109.8	113.3	116.9	108.2	97.0	99.5	114.2	124.0	142.2	116.5	109.2	106.2	108.2	39,493.5

*Future supply was calculated using per capita usage for current supply data and 2020 projected populations.

Table 8
1-in-10 Year Drought Rainfall Values (inches)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Collier	1.5	1.6	0.1	0.7	3.0	5.6	6.8	7.2	7.5	3.6	1.2	1.0
Lee	1.3	1.7	0.3	0.7	2.9	7.2	6.8	7.4	8.0	2.4	1.2	1.3

The irrigable acreage for each service area was developed to generate the monthly urban irrigation. There are two main components of the irrigable area including developed (residential and to a lesser extent, commercial) and open space areas (typically golf courses). Based on experience in Cape Coral and other reuse systems, a factor of 0.075 irrigable acres per capita was used for the developed areas. The open space irrigable areas, consisting of historical golf course acreage, were then added to the developed irrigable acreage, which results in the total irrigable acreage for each service area. The outcome is a percentage of irrigable acreage per total acreage of approximately 10 to 35 percent depending on the service area. This is a realistic percentage for a mixed-use area that has a higher residential coverage, but also includes non-developable coverage that does not require any significant irrigation needs such as wetlands, surface water, and retail/commercial areas. Tables 9 and 10 present the irrigable acreage used to determine the service area demands. It is important to note that future water conservation efforts such as Xeriscape™ landscaping, irrigation hours, and other mandatory ordinances may decrease the demand projections displayed here. These factors were not taken into consideration for this analysis.

It was determined that the B-C method alone does not realistically predict the irrigation demand, especially in terms of a normal temporal distribution in southwest Florida. With heavy local rainfall and an elevated water table, the demand for reclaimed water typically decreases drastically during the wet season months. The patterns displayed by the B-C model contradict these facts. For this reason, an alternative method was developed for determining irrigation demands for this project. Reuse factors (ratio of monthly reuse demand to annual average reuse demand) were determined for each service area using the flow data supplied by each franchise. For certain service areas that did not show an appropriate distribution, factors from a representative service area were used. These factors were then applied to the annual average demand supplied by the B-C model to create future demand projections. The reuse factors described above are included in the methodology for Attachment B. Other sources of supply and demand, including potential users and alternative options are presented in Attachment D.

The demand analysis was determined on a temporal basis for each service area. Tables 11 and 12 present the monthly demands for each service area. Figures 10 through 13 present the demands on a geographic basis.

In Table 11 it is illustrated that the current average demands for Collier and Lee counties respectively are approximately 18.4 and 32.5 MGD, resulting in a total study area demand of 50.9 MGD. Table 12 shows the corresponding demands for the future service areas. Collier and Lee counties project an average of roughly 730% and 400% increase respectively between 2000 and 2020 resulting in an estimated 580% increase overall for the same time period. Taking into consideration the anticipated growth of such areas as Cape Coral, Bonita Springs, and much of Collier County, these estimates appear to be reasonable.

Table 9
Irrigable Acreage – Current

Facility Inventory	Total Acreage	Developed Irrigable Acreage	Open Space Irrigable Acreage	Total Irrigable Acreage
Collier Co.				
Collier Co. North & Pelican Bay	54,374	4,627	3,170	7,797
Collier Co. South	78,290	4,862	4,198	9,060
Golden Gate	2,750	1,571	163	1,734
Marco Island Utilities	7,368	790	265	1,055
Naples	12,055	2,394	974	3,368
Subtotal	154,837	14,245	8,770	23,014
Lee Co.				
Bonita Springs	36,568	2,543	1,022	3,565
Cape Coral Utilities	42,670	5,538	1,191	6,729
Fiesta Village	9,781	1,665	272	1,937
Forest Utility	1,794	188	51	239
Ft. Myers Beach	12,954	3,388	360	3,748
Ft. Myers Central	13,212	1,990	368	2,357
Ft. Myers South	19,069	3,584	537	4,120
Gateway	6,905	227	191	418
Gulf Environmental Services	22,363	1,011	625	1,636
Lehigh Acres	62,672	1,679	1,750	3,429
North Ft. Myers	20,653	3,773	581	4,354
Pine Island	795	652	22	674
Sanibel	9,779	486	272	758
Waterway Estates	3,716	583	103	686
Subtotal	262,931	27,304	7,347	34,650
Total	417,768	41,548	16,116	57,665

Table 10
Irrigable Acreage – Future

Facility Inventory	Total Acreage - Future	Developed Irrigable Acreage	Open Space Irrigable Acreage	Total Irrigable Acreage
Collier Co.				
Collier Co. North & Pelican Bay	109,861	10,343	5,346	15,690
Collier Co. South	86,251	10,928	4,198	15,126
Golden Gate	2,750	1,571	163	1,734
Marco Island Utilities	7,368	1,410	361	1,772
Naples	12,055	2,770	974	3,744
Subtotal	218,284	27,023	11,043	38,066
Lee Co.				
Bonita Springs	36,568	4,786	1,022	5,808
Cape Coral Utilities	73,515	13,244	1,902	15,146
Fiesta Village	9,781	2,947	272	3,219
Forest Utility	1,794	188	51	239
Ft. Myers Beach	12,954	4,711	360	5,072
Ft. Myers Central	13,212	2,767	368	3,135
Ft. Myers South	31,302	4,182	810	4,992
Gateway	15,942	794	414	1,208
Gulf Environmental Services	22,363	2,486	625	3,111
Lehigh Acres	62,672	6,880	1,750	8,630
North Ft. Myers	20,653	4,182	581	4,763
Pine Island	21,193	921	546	1,467
Sanibel	13,984	577	361	938
Waterway Estates	3,716	645	103	748
Subtotal	339,648	49,309	9,166	58,475
Total	557,932	76,332	20,209	96,541

LEGEND:

2.4 Annual Average Daily Irrigation Demand (MGD)

Coast Line

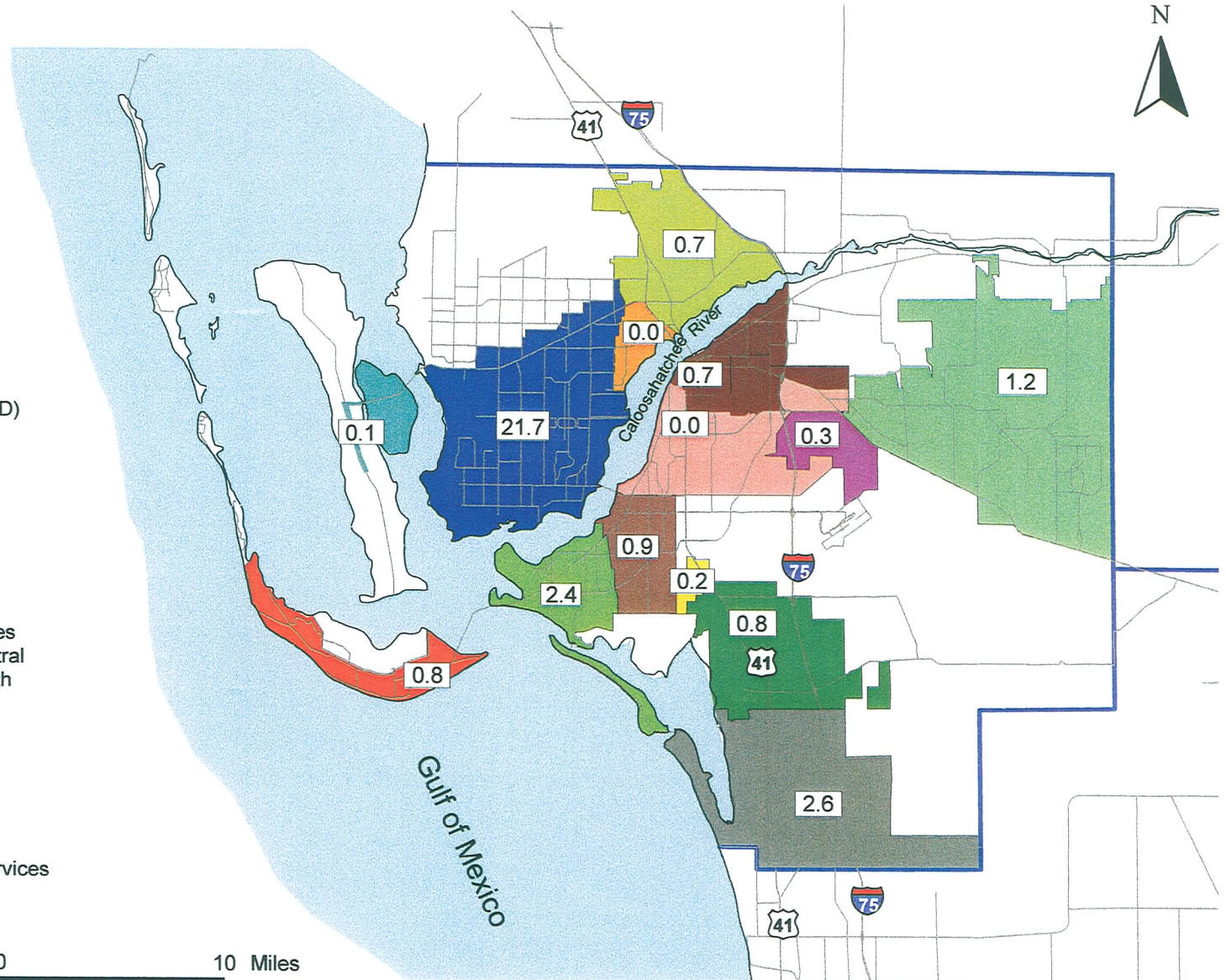
Major Roads

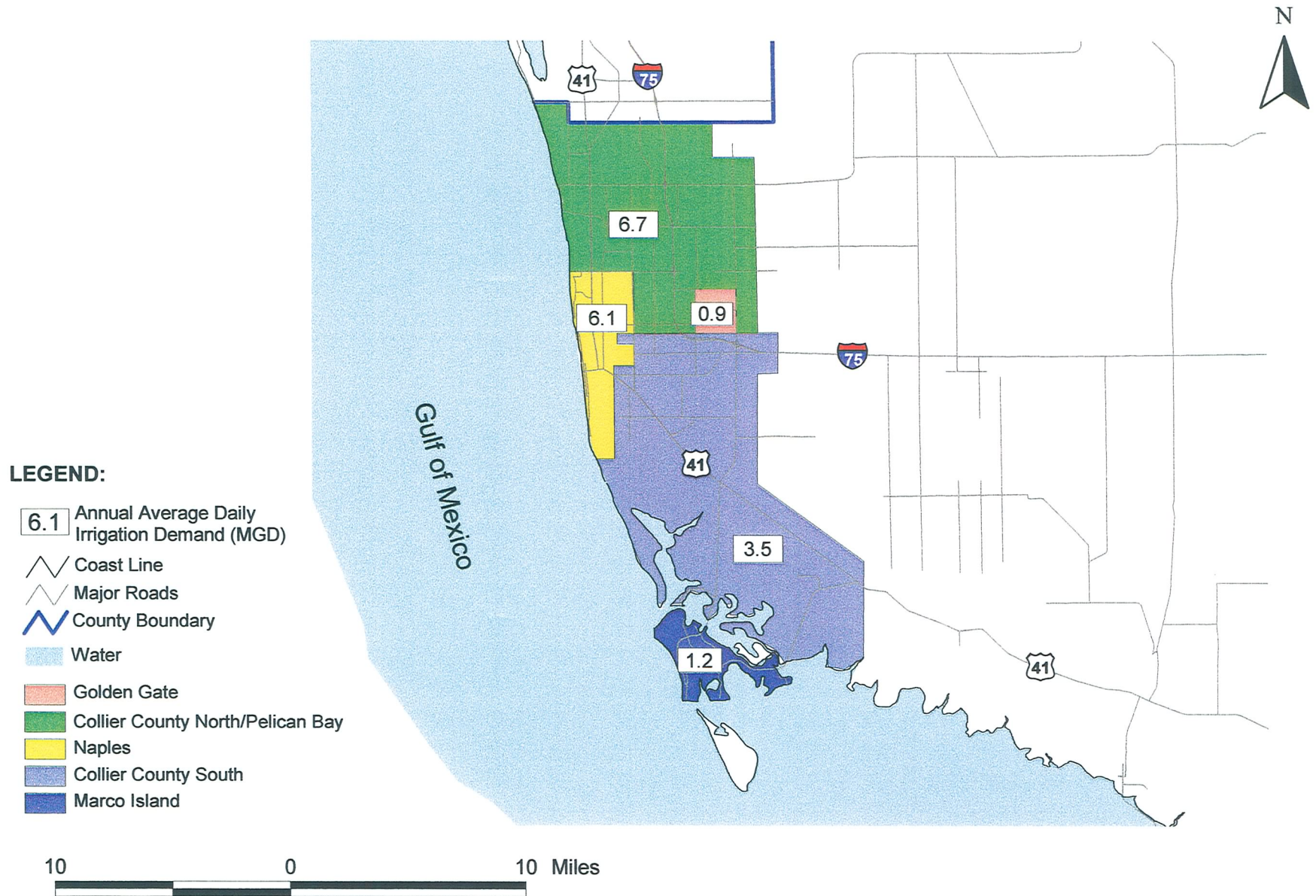
County Boundary

Water

Pine Island
Cape Coral Utilities
North Fort Myers Utilities
City of Fort Myers-Central
City of Fort Myers-South
Gateway
Florida Water Services
Fort Myers Beach
Fiesta Village
Waterway Estates
Forest Utilities
Sanibel
Gulf Environmental Services
Bonita Springs Utilities

10 0 10 Miles





LEGEND:

56.1 Annual Average Daily Irrigation Demand (MGD)

Coast Line

Major Roads

County Boundary

Water

Cape Coral

Pine Island

Waterway Estates

North Fort Myers

City of Fort Myers-Central

City of Fort Myers-South

Fort Myers Beach

Fiesta Village

Gateway

Bonita Springs Utilities

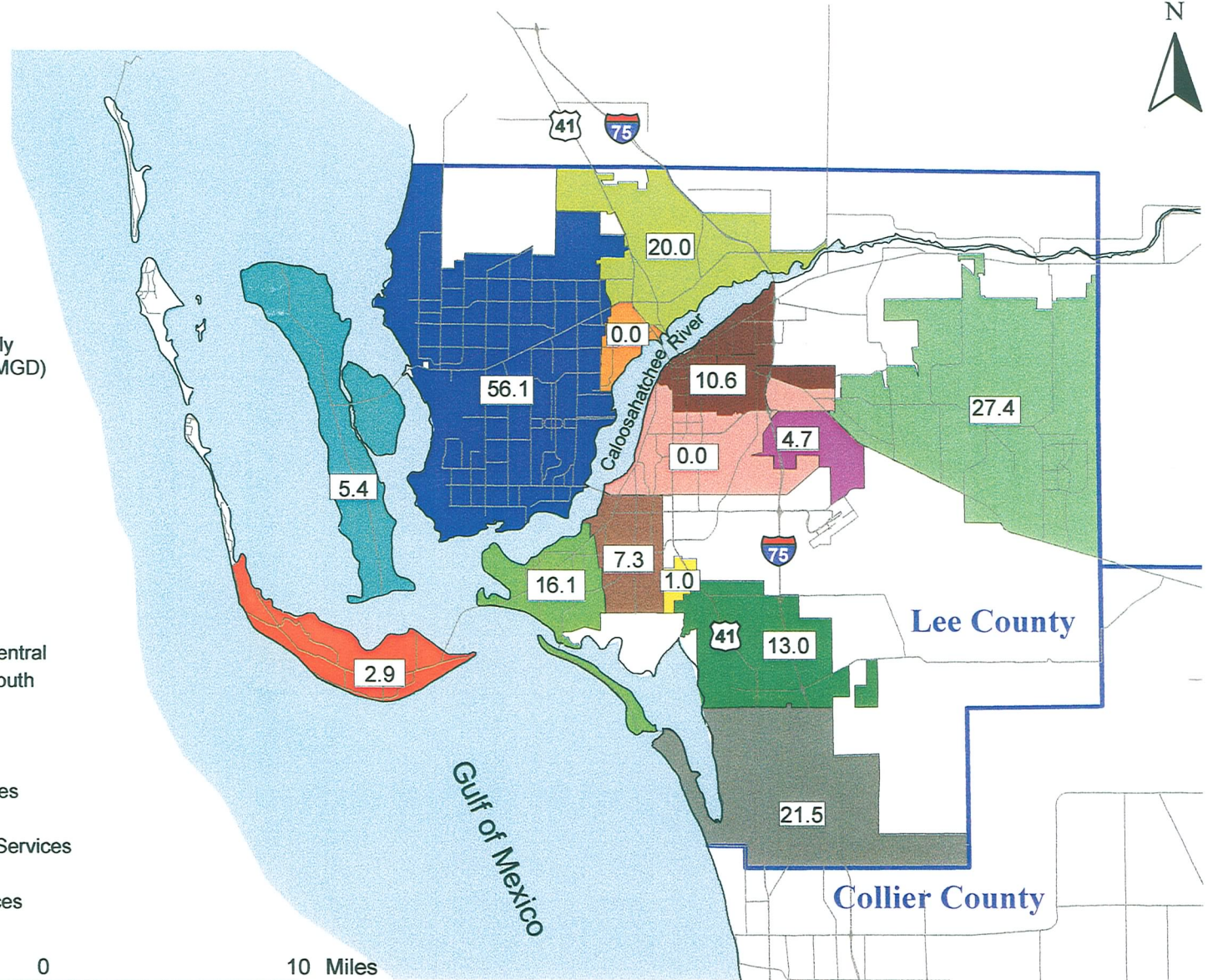
Sanibel Island

Gulf Environmental Services

Forest Utilities

Florida Water Services

10 0 10 Miles



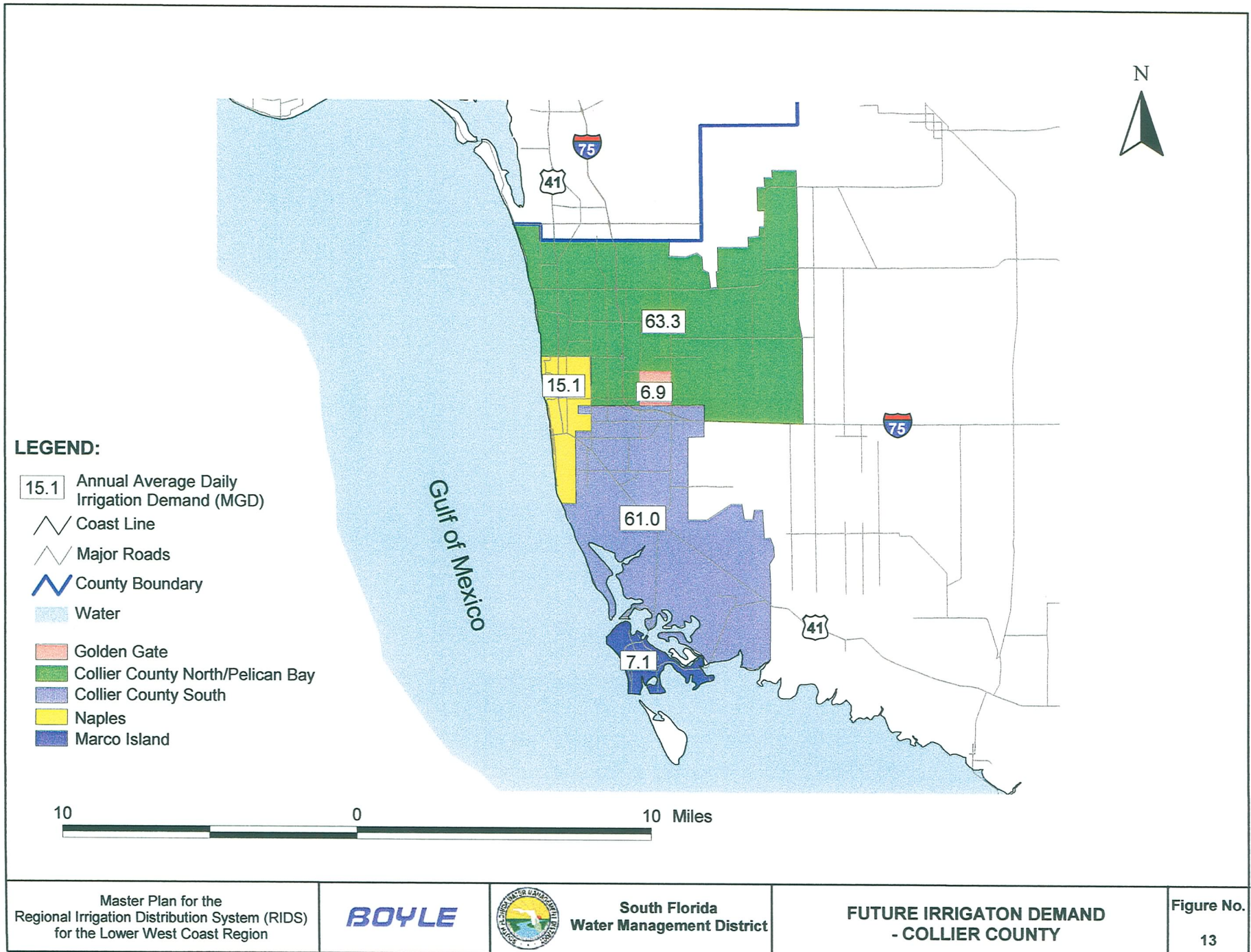


Table 11
Demand Analysis - Current

Facility	Actual Reclaimed System Demand* (MGD)												Annual Average (MGD)	Annual Total (MGY)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec		
Collier Co.														
Average 1-in-10 Irrigation (in)	1.3	1.5	3.8	4.8	5.2	4.7	4.6	4.1	3.1	3.4	2.7	1.9		
Collier Co. North ^a	7.7	8.0	8.5	7.2	6.0	5.5	5.8	5.7	5.3	6.7	6.9	7.4	6.7	2,454.6
Collier Co. South ^a	3.2	5.3	5.3	5.6	4.0	3.8	3.1	2.3	1.3	2.9	3.3	2.1	3.5	1,283.9
Golden Gate ^b	0.9	0.8	0.8	0.8	0.8	0.8	1.0	0.9	1.5	0.9	0.8	0.9	0.9	331.1
Marco Island Utilities ^b	1.2	1.5	1.5	1.8	1.5	1.2	0.4	0.7	0.3	1.1	1.5	1.3	1.2	426.2
Naples ^b	6.2	6.2	6.1	6.1	6.0	6.0	6.1	6.1	6.1	6.2	6.1	6.1	6.1	2,227.7
Subtotal	19.2	21.9	22.2	21.6	18.3	17.3	16.3	15.6	14.5	17.8	18.6	17.8	18.4	6,723.5
Lee Co.														
Average 1-in-10 Irrigation (in)	1.2	1.3	3.6	4.7	5.1	3.7	4.2	3.7	2.5	3.6	2.5	1.5		
Bonita Springs ^b	2.9	2.9	3.1	2.8	2.3	2.1	2.0	2.4	2.6	2.8	2.9	3.0	2.6	966.6
Cape Coral Utilities ^{c, b}	20.5	24.1	26.5	32.4	32.5	15.9	12.9	11.3	9.3	22.8	30.3	21.7	21.7	7,909.6
Fiesta Village ^d	1.0	1.3	1.1	1.2	1.2	0.6	0.4	0.4	0.2	0.9	1.3	1.0	0.9	321.5
Forest Utility ^b	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	90.9
Ft. Myers Beach ^d	2.1	1.9	3.6	3.6	2.8	2.1	2.0	2.0	1.2	2.6	2.8	2.1	2.4	874.8
Ft. Myers Central ^e	0.6	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.7	250.6
Ft. Myers South ^e	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gateway ^d	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	107.2
Gulf Environmental Services ^b	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	276.2
Lehigh Acres ^b	0.9	0.8	0.8	0.8	0.6	0.8	1.1	1.7	2.4	2.0	1.2	1.2	1.2	438.4
North Ft. Myers ^b	0.8	0.8	0.6	1.1	0.9	0.7	0.6	0.3	0.5	0.8	0.8	0.8	0.7	262.5
Pine Island ^g	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	36.5
Sanibel ^h	0.8	0.9	1.0	0.9	0.7	0.8	1.0	0.8	0.8	0.7	1.0	0.7	0.8	304.8
Waterway Estates ^d	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2
Subtotal	31.0	34.8	38.9	44.9	43.1	25.1	22.1	21.1	18.9	34.8	42.4	32.6	32.5	11,848.8

Total Monthly Flow (MGD)	50.2	56.6	61.1	66.5	61.4	42.3	38.4	36.7	33.4	52.7	60.9	50.4	50.9	18,572.3
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*"Reclaimed System" is defined as all water that is conveyed in the reclaimed infrastructure, including surface water, reclaimed water, and groundwater withdrawals.

a. This data displays 1999 flows from Oct. - Dec. and 2000 flows for Jan. - Sept.

Table 11
Demand Analysis - Current

b. This data was taken from Monthly Operating Reports submitted to the Dept. of Environmental Protection (Jan - Sept '01, Oct - Dec '00)

c. Influent Cape Coral data combines the flow from Cape Coral Everest and Cape Coral Southwest WWTPs

d. 2000 data

e. This data displays 2000 data from Oct. - Dec. and 2001 flows for Jan. - Sept.

f. 2001 data (this plant just opened in Feb. of 2001)

g. 2001 data from Feb.- Sept. w/ supplemental data from Matlacha WWTP (now closed)

h. 1999 data

The Highpoint WWTP was deleted from The study due to its small flows and lack of data

Table 12
Demand Analysis – Future

Facility	Normalized Modified Blaney-Criddle Demand (MGD)												Annual Average	Annual Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	(MGD)	(MGY)
Collier Co.														
Average 1-in-10 Irrigation (in)	1.3	1.5	3.8	4.8	5.2	4.7	4.6	4.1	3.1	3.4	2.7	1.9		
Collier Co. North	72.4	75.3	80.0	67.7	56.4	51.7	54.6	53.6	49.9	63.0	64.9	69.6	63.26	23,091.2
Collier Co. South	69.8	72.6	77.1	65.3	54.4	49.9	52.6	51.7	48.1	60.8	62.6	67.1	60.99	22,261.9
Golden Gate	6.8	6.4	6.2	6.5	6.3	6.0	7.6	6.8	11.5	6.6	6.4	6.8	6.99	2,551.9
Marco Island Utilities	8.2	8.5	9.0	7.6	6.4	5.8	6.2	6.1	5.6	7.1	7.3	7.9	7.14	2,607.7
Naples	17.3	18.0	19.1	16.2	13.5	12.3	13.0	12.8	11.9	15.0	15.5	16.6	15.10	5,509.9
Subtotal	174.5	180.7	191.4	163.3	137.0	125.8	133.9	131.0	126.9	152.6	156.7	168.0	153.5	56,022.6
Lee Co.														
Average 1-in-10 Irrigation (in)	1.2	1.3	3.6	4.7	5.1	3.7	4.2	3.7	2.5	3.6	2.5	1.5		
Bonita Springs	23.2	23.5	25.2	23.0	18.6	17.4	16.1	19.8	20.7	23.1	23.2	24.2	21.50	7,846.9
Cape Coral Utilities	53.0	62.4	68.4	83.7	84.1	41.1	33.4	29.3	24.0	58.9	78.3	56.1	56.06	20,463.1
Fiesta Village	7.1	8.8	8.0	8.1	8.1	4.5	2.8	2.5	4.4	6.3	9.3	7.3	6.43	2,346.6
Forest Utility	1.0	1.0	1.0	0.9	0.8	0.8	0.8	0.7	0.8	0.9	0.9	1.0	0.88	322.9
Ft. Myers Beach	16.3	14.5	28.2	28.3	22.2	16.3	15.9	15.7	18.1	20.4	22.3	16.1	19.53	7,127.3
Ft. Myers Central	10.8	11.2	12.7	13.5	13.2	11.3	11.5	11.3	10.6	11.5	11.0	10.6	11.60	4,235.3
Ft. Myers South	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
Gateway	4.2	4.0	4.3	4.0	4.2	4.3	4.2	5.0	4.9	4.9	5.0	4.7	4.47	1,631.8
Gulf Environmental Services	12.4	12.6	13.5	12.3	10.0	9.3	8.6	10.6	11.1	12.4	12.4	13.0	11.51	4,202.7
Lehigh Acres	27.8	24.7	47.9	48.1	37.8	27.8	27.1	26.8	30.7	34.6	38.0	27.4	33.23	12,128.1
North Ft. Myers	19.4	19.0	15.4	26.1	21.8	17.7	14.5	8.2	11.4	18.9	19.3	20.0	17.63	6,435.6
Pine Island	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.43	1,982.0
Sanibel	3.4	3.7	4.1	3.8	2.7	3.2	4.2	3.3	3.2	3.0	4.1	2.9	3.47	1,267.1
Waterway Estates	2.7	16.1	3.5	3.2	3.2	4.2	0.3	0.0	0.0	0.0	0.0	0.0	2.77	1,010.9
Subtotal	186.9	206.9	237.6	260.4	232.1	163.2	144.9	138.8	145.4	200.2	229.3	188.6	194.5	71,000.2
Total Monthly Flow (MGD)	361.5	387.6	429.0	423.7	369.0	289.0	278.8	269.7	272.3	352.8	386.0	356.6	348.01	127,022.8

* These figures represent calculated values for the year 2020, based on a normalized version of a modified Blaney-Criddle Method.

This analysis concludes that the demands were even more significant than previously predicted by the LWCWSP. In order to satisfy the growing demands placed on the current systems, it is clear that the future of irrigation water will draw from a variety of alternative sources to satisfy these projected demands and minimize impacts to other stretched resources, such as groundwater.